POSTER SESSION

1143 New Insights Into Old Problems: Infective Endocarditis and Redo Valvular Surgery

Tuesday, March 09, 2004, Noon-2:00 p.m.
Morial Convention Center, Hall G
Presentation Hour: 1:00 p.m.-2:00 p.m.

1143-135 The Risk of Prosthetic Valve Endocarditis in Patients With Staphylococcus Aureus Bacteremia

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Background: A major complication of prosthetic valves is prosthetic valve endocarditis (PVE). *Staphylococcus aureus* is a common cause of bacteremia and of infective endocarditis (IE) of native heart valves. However, there are limited data about the risk of IE in patients with a prosthetic valve and *Staphylococcus aureus* bacteremia (SAB). The aim of this study was to define the incidence of PVE in patients with SAB.
Methods: In order to define the risk of PVE, we prospectively evaluated all patients with a prosthetic valve or ring (PV) who presented to our hospital and developed SAB. Duke criteria for IE were used for the diagnosis of PVE. All patients were followed up for 12 weeks after diagnosis of SAB.
Results: Fifty-two patients met the criteria over a 94-month study period. The overall rate of definite PVE was 26/52 (50%). The risk of PVE was similar in patients with late SAB (more than 12 months after PV implantation) and those with early SAB (less than 12 months after PV implantation). The risk was also comparable among patients with a mitral prosthesis and those with an aortic prosthesis (55% vs. 46%). The presumed source of SAB was a surgical wound in 21 patients, an intravascular device (IV catheter, hemodialysis graft) in 9 patients, IV drug use in 4 patients, other tissue source in 3 patients, and unidentifiable in 15 patients. MRSA was present in 36% of the patients. The 12-week mortality among patients with PVE was 46%.
Conclusion: Among patients who develop SAB in the presence of a PV, 50% will be diagnosed with PVE regardless of the time from valve implantation to the onset of SAB. The diagnosis of PVE carries a high mortality rate. All patients with SAB in the presence of a prosthetic valve should be aggressively screened for PVE.

1143-136 Prosthetic Valve Endocarditis: Report of 214 Cases From the Intracardiac Echocardiography Prospective Cohort Study

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Background: Prosthetic valve endocarditis (PVE) is an emerging but incompletely understood complication of medical progress.
Aim of Study: To determine the current clinical characteristics and outcome of patients with PVE utilizing the International Collaboration on Endocarditis (ICE) Prospective Cohort Study (ICE-PCS).
Methods: From January 2000 through November 2002, 1024 cases of definite IE were prospectively enrolled by 34 centers representing 15 countries using a standard case report form. Of these, 214 (20.8%) had PVE.
Results: The median age of PVE patients was 59.5 years (IQR 47.0-73.0); 69.2% were male. The interval from valve surgery to onset of PVE was ≤ 60 days in 21 patients and > 365 days in 69 patients (median = 447.5 days, IQR 104 – 2329 days). The most common organisms were *Staphylococcus aureus* (25.8%), coagulase negative staphylococci (18.3%), and viridans group streptococci (11.7%). PVE was demonstrated by echocardiography in 146 patients (92.4%): vegetations (70.6%), abscess (32%), dehiscence (15%), and fistula (1%). Surgery during the acute episode was common (52.3%) with valve regurgitation (54.5%) and abscess (42.0%) the most frequent indications. Embolic events (stroke 13.5%, other emboli 13.2%), heart failure (31.2%), intracardiac abscess (33.2%), and death (23.8%) were frequent complications of PVE.
Conclusion: In this large, multicenter, international cohort, *S. aureus* was the most common cause of PVE. Although over 50% of patients went to surgery, mortality remained high. Further work is needed to evaluate the emerging importance of *S. aureus* as a cause of PVE, to identify risk factors for death, and to define the impact of early surgery on survival.

1143-137 Echocardiographic Features of Definite Infective Endocarditis: A French Collaborative Study on 561 Cases

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Aim of the study: To describe echocardiographic (Echo) features of definite infective endocarditis (IE) in the Duke criteria era
Methods: We reviewed the charts of 561 pts included in the French survey on IE (1999). The case report form included information on clinical and microbiological characteristics of IE. Specific Echo data included transthoracic (TTE) and transesophageal (TEE) description of valve lesions for each infected valve: vegetation (Vg), abscess (Ab), prosthetic dehiscence (PD), perforation (Perf), significant regurgitation (Reg).
Results: Among 561 pts (mean age : 59±17 yrs), Echo revealed a Vg in 487 pts (87%), an Ab in 92 (16%), a Reg in 476 (85%) and a PD in 20 (23%). Site of IE could not be identified precisely in 49 pts (9%).
Among the 400 cases for whom TTE and TEE findings could be clearly separated, TEE proved to be more accurate in 238 (60%), yielding an additional identification of a Vg, an Ab, a Perf and a PD in 187 (47%), 55 (14%), 15 (4%) and 6 (1%) pts respectively.
Among the 264 pts (47%) treated surgically, information on macroscopic findings were available in 224. Comparison between Echo and macroscopic findings were in complete agreement in 126 pts (56%), but differed concerning the diagnosis of Vg in 52 pts (23%), Ab in 29 (13%), Perf in 41 (18%), and PD in 2.
When sorting responsible micro-organisms in 5 groups (1: staphylococci n=167, 2: streptococci n=270, 3: enterococci n=46, 4: others n=49, and 5: none identified n=29) and comparing Echo findings among them, there was a trend towards a lower frequency of Vg in enterococcal IE (1: 90%, 2: 87%, 3: 74%, 4: 88%, 5: 86%, p<.09), a lower rate of Ab in staphylococcal IE (1: 12%, 2: 17%, 3: 26%, 4: 25%, 5: 10%, p<.07) and a higher frequency of Reg in streptococcal IE (1: 78%, 2: 92%, 3: 87%, 4: 80%, 5: 69%, p<.001)
A Vg was found more often in pts with vascular phenomena (p<.002) and embolic event (p<.001). Pts with Ab (p<.001), Reg (p<.001) or PD (p<.04) were more often operated on than those without.
Conclusion: TEE is of great importance for the diagnosis of IE. However, when compared to surgical findings, accuracy of TEE for description of valve lesions often remains suboptimal. Echocardiographic patterns may differ according to responsible micro-organisms.

1143-138 Prognostic Implications of Vegetation Size at Hospital Admission in Infective Endocarditis

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BACKGROUND: The information obtained from echocardiography in infective endocarditis is employed with prognostic aims. We assessed the hypothesis that vegetation size in the first transesophageal study (TEE) has prognostic implications in the clinical course of infective endocarditis. **METHODS**: We analyzed 265 consecutive episodes of infective endocarditis with vegetations documented on the first TEE. The relative risk obtained from the univariate analysis was adjusted by a logistic regression model including the following variables: age, acute or subacute course, underlying heart disease, microorganism, valve (native, mechanical, biological), position of the valve and embolisms before institution of correct antibiotic treatment. A cut-off value of vegetation size for risk increase was calculated according to quartile distribution of vegetation size. **RESULTS**: On the multivariate analysis, vegetation size resulted to be an independent factor for the following events: septic shock, persistent infection, renal failure and need for surgery. Clinically, risk was increased for vegetation size ≥ 20 mm (upper quartile, table). **CONCLUSIONS**: Vegetation size in the first TEE predicts the development of septic shock, signs of persistent infection, renal failure, and the need for surgery. The risk of these complications is particularly relevant when the vegetation size is ≥ 20mm.

		Adj RR	95% CI	P value
NEED FOR SURGERY	Overall	1.08	1.03- 1.13	0.002
	Vegetation size ≥ 20 mm	6.13	2.02- 18.50	< 0.001
SEPTIC SHOCK	Overall	1.08	1.00- 1.16	< 0.001
	Vegetation size ≥ 20 mm	21.48	1.49- 307.93	0.02
PERSISTENT INFECTION	Overall	1.05	1.01- 1.10	0.02
	Vegetation size ≥ 20 mm	3.32	1.10- 9.99	0.03
RENAL FAILURE	Overall	1.04	0.99- 1.09	0.06
	Vegetation size ≥ 20 mm	2.38	0.73- 7.75	0.15

1143-139 Hepatosplenic and Renal Embolisms in Infective Endocarditis

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BACKGROUND: As one of the complications of infective endocarditis, embolization has a great impact on prognosis. We assessed the epidemiological, clinical, microbiological, echocardiographic and prognostic features of episodes of infective endocarditis with symptomatic embolisms in the hepatosplenic circulation or the kidney. **METHODS**: We studied 338 consecutive episodes of left-sided infective endocarditis. Embolisms were documented by abdominal ultrasound and/or computed tomography. **RESULTS**: There were 40 embolisms (33 at the spleen, 5 at the kidney, and 2 at the liver) in 33 episodes (9.7%) of endocarditis (group I). The remaining 305 episodes form the group II. Different characteristics in both groups are summarized in the table. In 2 episodes non-cardiac surgery was performed: splenectomy in one, renal biopsy in other. Cardiac surgery rates were comparable and mortality was higher in group I. On the logistic regression analysis, embolisms were not an independent factor associated to higher mortality nor to valve surgery. **CONCLUSIONS**: In left-sided infective endocarditis complicated with embolisms in the hepatosplenic circulation or the kidney: 1) Detection of vegetations by transesophageal echocardiography is more frequent and they are larger. 2) *S. aureus* and entero-